

enter your name and address if different than "Payor Name" (block 3). Blocks 17 & 18 are only to be completed when required by Public Notice.

(ii) If you are filing concurrent actions (not the same actions) in the same lockbox, on the same application, refer to the Fee Filing Guide or Public Notice for specific instructions as to the number of quantities allowed. Complete only blocks 12, 13, 14, 15, & 16. Complete a separate "Item Information" section for each additional action required. Only enter your name and address if different than the "Payor Name" (block 3). Blocks 17 & 18 are only to be completed when required by public notice.

(iii) If a single Remittance Advice is used to pay for more than one applicant, licensee, regulatee or debtor, and action to the same lockbox, then a separate "Item Information" section must be completed for each one. For each "Item Information" section all blocks must be completed, except Blocks 17 & 18 which are only to be completed when required by Public Notice. **Remember, if any of these applications fall into category (i) or (ii) above, you must follow those instructions as well.**

(15) **Quantity** — Enter the number of actions required with this submission. Refer to the FCC Fee Filing Guide or Public Notice for information concerning multiple requests.

(16) **Amount Due** — Enter the amount of the fee required for the Payment Type Code used in (14) above.

(17) **FCC Code 1** — This section is used for special filing codes as required by the Bureau/Office

you are filing your application with. Applicant will receive specific instructions from the Bureau/Office if this block is to be used. Do not complete this block unless instructed to do so.

(18) **FCC Code 2** — (See instructions for item 17).

(19, 20, 21) **Address** — If the same as Payor address, in blocks (4) and (5), leave blank. If multiple payment codes have been used for the same Applicant, Licensee, Regulatee or Debtor, only fill out this section one time. If different from Payor Address, in blocks (4) and (5), complete these lines with the appropriate street address.

(22) **Credit Card Data** — If remitting payment by credit card place an "x" in the appropriate block for the type of credit card being used — MasterCard or Visa only. Enter your credit card number and expiration date. **If any area required for credit card approval is incomplete, the application will be returned unprocessed.**

(23) **Authorized Signature** — Sign and date the Remittance Advice Form to authorize all credit card payments. **The action will not be processed if it is not signed and dated here.**

FCC Remittance Advice Continuation Sheet (FCC Form 159-C) — Use this form for any additional services pertaining to this filing.

Checks must be denominated in U.S. currency and deposited in a U.S. financial institution. No checks drawn on a foreign bank will be accepted.

Where Do I File?

If you are paying a:	Then:
Regulatory Fee or Processing Fee	Consult the specific FCC Bureau Fee Filing Guide (i.e., Common Carrier Bureau Fee Filing Guide, Private Radio Bureau Fee Filing Guide, Mass Media Bureau Fee Filing Guide, Cable Services Bureau Fee Filing Guide, Field Operations Bureau Fee Filing Guide, Office of Engineering and Technology Fee Filing Guide)
Fine or Forfeiture	Pay to the address designated on the notice or invoice you received
Freedom of Information Act Fee	Pay to the address designated on the invoice you received
Other Debts	Pay to the address designated in the correspondence you received

Note: Fee Filing Guides can be obtained by calling Forms Distribution — 202/632-FORM

FCC REMITTANCE ADVICE

PAGE NO. 1 OF 1

(RESERVED)

SPECIAL USE

FCC USE ONLY

(Read instructions carefully BEFORE proceeding.)

PAYOR INFORMATION

(1) FCC ACCOUNT NUMBER

Did you have a number prior to this? Enter it.

(2) TOTAL AMOUNT PAID (dollars and cents)

0418176529111

\$ 350,000.00

(3) PAYOR NAME (If paying by credit card, enter name exactly as it appears on your card)

J FREDERICK ROSS

(4) STREET ADDRESS LINE NO. 1

1 CANYON DRIVE

(5) STREET ADDRESS LINE NO. 2

(6) CITY

CHEYENNE

(7) STATE

WY

(8) ZIP CODE

82001

(9) DAYTIME TELEPHONE NUMBER (Include area code)

307/638-4444

(10) COUNTRY CODE (if not U.S.A.)

ITEM #1 INFORMATION

(11A) NAME OF APPLICANT, LICENSEE, REGULATEE, OR DEBTOR

FCC USE ONLY

(12A) FCC CALL SIGN/OTHER ID

(13A) ZIP CODE

(14A) PAYMENT TYPE CODE

A C G C

(15A) QUANTITY

(16A) FEE DUE FOR
PAYMENT TYPE CODE
IN BLOCK 14
\$

(17A) FCC CODE 1

(18A) FCC CODE 2

(19A) ADDRESS LINE NO. 1

(20A) ADDRESS LINE NO. 2

(21A) CITY/STATE OR COUNTRY CODE

ITEM #2 INFORMATION

(11B) NAME OF APPLICANT, LICENSEE, REGULATEE, OR DEBTOR

FCC USE ONLY

(12B) FCC CALL SIGN/OTHER ID

(13B) ZIP CODE

(14B) PAYMENT TYPE CODE

(15B) QUANTITY

(16B) FEE DUE FOR
PAYMENT TYPE CODE
IN BLOCK 14
\$

(17B) FCC CODE 1

(18B) FCC CODE 2

(19B) ADDRESS LINE NO. 1

(20B) ADDRESS LINE NO. 2

(21B) CITY/STATE OR COUNTRY CODE

CREDIT CARD PAYMENT INFORMATION

(22) MASTERCARD/VISA ACCOUNT NUMBER:

☐ Mastercard

EXPIRATION DATE:

Month

Year

☐ Visa(23) I hereby authorize the FCC to charge my VISA or Mastercard
for the service(s)/authorization(s) herein describe.

AUTHORIZED SIGNATURE

DATE

See public burden estimate on reverse.

FCC FORM 159
April 1994

Long Form 401

Application for New or Modified Common Carrier Radio Station Authorization Under Part 22

General Information and Instructions

1. The FCC Form 401 is in two parts, Schedule A and Schedule B. Complete one Schedule A for each application. Complete one Schedule B for each antenna location. **Note:** Separate Schedule B's may be obtained.

Uses of FCC Form 401

2. FCC Form 401 is to be used for the following:
- (A) New Common Carrier Radio Station Authorization.
 - (B) Modification of an existing station authorization (except as prescribed in Section 22.9(d) of the Commission's Rules)
 - (C) Amendment of Pending Application.
 - (D) Partial Assignment.
 - (E) Subsidiary Communications Authorization.

3. The form consists of the covering instructions and the following pages which comprise the main body of the form. Remove instructions before submitting the form to the Commission.

Applicable Rules and Regulations

4. Before this application is prepared applicant should refer to Part 22 of the Commission's Rules and Regulations, copies of which may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Subparts B and C of Part 22 apply to all types of applicants and in certain instances may require information to be filed with an application in addition to that specified in this application form. Applicants should make every effort to file complete applications. Failure to do so can result in a rejection and return of the application or a delay in the processing of the application.

Paper Copies

5. Number of **paper copies** to be submitted varies depending on the type of service applied for. See 47 CFR Section 22.6 for specific instructions.

Microfiche Copies

6. Filings exceeding five pages must be submitted on microfiche. Submit **three microfiche copies** (one original and two copies). See 47 CFR Section 22.6. Each microfiche copy must be a copy of the signed original. Each microfiche copy shall be a 148mm X 105mm negative (clear transparent characters appearing on an opaque background) at 24X to 27X reduction for microfiche or microfiche jackets. One of the microfiche sets must be a silver halide camera master or a copy made on silver halide film such as Kodak Direct Duplicating Film. The

microfiche must be placed in paper microfiche envelopes and submitted in a 5" x 7.5" envelope. All applicants must leave Row "A" (the first row for page images) of the first fiche blank for in-house identification purposes. An original and two copies of microfiche must be submitted.

Fees

7(A) A processing fee may be required with this application. Refer to either 47 CFR 1.1105, the Common Carrier Services Fee Filing Guide, or call (202)632-FEES for appropriate fee. **DO NOT SEND CASH.** Payment may be made by check, bank draft, or single money order payable to: **Federal Communications Commission.**

Specific Instructions for Schedule A and Schedule B:

8(A) Cellular Radio Telecommunications Service - See Subpart K, Part 22 which specifies additional exhibits that are required.

(B) Temporary Locations - Applicants for any class of station at temporary locations should complete either Item 27 or provide an exhibit showing the area of operation. This exhibit should be shown in Item 22 of the application. Applicants for temporary-fixed station facilities described in Section 22.610 of Part 22 are not required to answer Items 9, 34, 35, 36, columns 6 and 7 in MOB-2, or any part of MOB-3.

(C) Subsidiary Communications Authorizations - Complete only items 1, 2, 3, 4, 6, 23, 24, 25, 26, 27, 28 and 33(X1). Special instructions are as follows:

- Item 1 - Specify the Call Sign of the Broadcast Station.
- Item 3 - The name and address of the Broadcast Station.
- Item 6 - If the Common Carrier Paging Service is to be provided by an entity other than the broadcast licensee, submit an exhibit listing the name and address of the proposed lessee. The exhibit should also include a certified statement signed by the lessee that he (she) is familiar with Part 22 of the Rules.
- Item 33(X1) - Give Broadcast frequency or TV channel number.

Exhibits

9. Each document required to be filed as an exhibit should be current as of the date of filing. If reference is made to information already on file with the Commission see Item 10 below.

Cross-Referencing

10. You may cross-reference documents, exhibits, or

other lengthy showings already on file with the Commission only if: the information previously filed is over one 8 1/2" by 11" page in length, and all information therein is current and accurate in all significant respects; the cross-reference states specifically where the previously filed information can be found (i.e., station call sign and application file number, title of proceeding, docket number, and legal citations), including exhibit and page references. However, questions on an application form which call for specific technical data, or which can be answered by a "yes" or "no" or other short answer shall be answered as appropriate and shall not be cross-referenced to a previous filing. See Section 22.13(b) of the Rules.

Current Information

11. Information filed with the Commission must be kept current. The applicant should notify the Commission regarding any material change in the facts as they appear in the application. See Section 1.65 of the Commission's Rules.

Waivers

12. Requests for waivers shall contain a statement of reasons sufficient to justify a waiver, under Section 22.19 of the Rules. A separate request, with the required showing, must be made for each rule waiver desired, identifying the specific rule or policy for which a waiver is requested.

Paperwork Reduction and Privacy Act Notice

13. Personal information requested through this form is authorized by the Communications Act of 1934, as amended, and specifically Section 308 thereof. The information will be used by Federal Communications Commission staff to determine eligibility for issuing authorizations for the use of frequency spectrum and to effect the provision of regulatory responsibilities rendered by the Commission under the Act. Failure to provide all requested information will delay the processing of the application. Information requested by this form will be available to the public. Your response is required to obtain the requested authorization.

Public reporting burden for this collection is estimated to average 8 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Federal Communications Commission, Office of Managing Director, Washington, D.C. 20554, and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Paperwork Reduction Project (3060-0046), Washington, D.C. 20503.

The foregoing Notice is required by the Privacy Act of 1974, P.L. 93-597, December 31, 1974, 5 U.S.C. 552a(c)(3), and the Paperwork Reduction Act of 1980, P.L. 96-511, Section 3504(c)(3).

Narrowband PCS Filing Instructions for FCC Form 401

- Complete only the Schedule A on the Form 401.
- Completion of the Form 401 Schedule A

<u>Item</u>	<u>Response</u>
1(a)	NO
1(b)	NO
2(a)	N/A
2(b)	N/A
3	Complete
4	Complete
6	Complete
7	N/A
8	Select A
9	N/A
10-20	Complete
21	N/A
23-26	Complete
22	Attach the following Exhibits:

I *Ownership Interest*

**47 C.F.R. § 1.2107(d) Submission of Down Payment
and Filing of Long-Form Applications**

II *Showing for PMRS*

47 C.F.R. § 20.9(b)(1)

V *Ownership Exhibit*

47 C.F.R. § 24.413

Microfiche copies of the FCC Form 175 or 175-S are required. See Section 24.406.

Application for New or Modified Common Carrier Radio Station Authorization
Under Part 22

Call Sign

Schedule A

Complete One Schedule A Per Application

1(a) Does this application refer to an existing station? If "YES," give Call Sign: ▶ _____	<input type="checkbox"/> YES <input type="checkbox"/> NO	2(a) Fee Submitted \$ _____
(b) Is this an amendment to a pending application If "YES," give File No.: ▶ _____	<input type="checkbox"/> YES <input type="checkbox"/> NO	(b) No. of separate sites requested in this application

3. Name of Applicant. Indicate the name, mailing address and telephone number of the applicant. (For Subsidiary Communications Authorizations, see Instruction No. 8(C).)

Legal Name of Applicant (If person, list last name first)

Assumed Name Used for Doing Business (if any)

Mailing Street Address or P.O. Box, City, State and ZIP Code

Area Code - Telephone No.

4. Contact Representative. Indicate the name, mailing address, and telephone number of person to contact, if other than applicant.

Name (Last name first)

Firm or Company Name

Mailing Street Address or P.O. Box, City, State and ZIP Code

Area Code - Telephone No.

6. Type of Service (Mark "X" One)

A. ☐ One-Way (Except Subsidiary Communications Authorization)

B. ☐ Two-Way

C. ☐ Both One-Way and Two-Way

D. ☐ One-Way (Subsidiary Communications Authorization)

Will broadcast facilities be leased? ☐ YES ☐ NO

If "YES," submit as Exhibit _____,
the name and address of the proposed lessee.

B. Carrier Type

A. ☐ Radio Common Carrier B. ☐ Wireline Common Carrier

7. Nature of Service

A. ☐ Public Land Mobile Service (Other than Air-Ground Radiotelephone Service)

B. ☐ Domestic Public Cellular Radio
Telecommunications Service
Specify Market No. and Block below:

▶ _____ ▶ _____
▶ _____ ▶ _____

C. ☐ Offshore Radio Service

D. ☐ Rural Radio Service

E. ☐ Air-Ground Radiotelephone Service

F. ☐ Developmental
Attach as Exhibit _____ a narrative
statement in support of the request.
(See 47 CFR 22, Subpart F)

9. Control Points - Table MOB-1A: to be completed for control points which are initial, additional or deleted.

In Column (B) use the following symbols to specify status: I=Initial; A=Additional; D=Deleted.

(A) Location (Street Address, City or Town and State)	(B) I, A or D	FCC Use Only Control Point No.

- Table MOB-1B: to be completed for control points which are to be relocated. Give the present location first, followed by the proposed location.

Location (Street Address, City or Town and State)	FCC Use Only Location No.
1. Present Location:	
Proposed Location:	
2. Present Location:	
Proposed Location:	

FCC 401 - Schedule A - Page 2
January 1993

FCC Third Report and Order

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

43033

In the Matter of)	
)	
Implementation of Section 309(j))	PP Docket No. 93-253
of the Communications Act -)	
Competitive Bidding)	

ERRATUM TO THIRD REPORT AND ORDER

Released: May 13, 1994

This Erratum makes minor corrections to the text of and the final rules adopted in the Third Report and Order in the above-captioned proceeding, FCC 94-98, which was released on May 10, 1994. The full text of the Third Report and Order and the rules will be published as corrected in the FCC Record.

1. Page 30, paragraph 72, of the Third Report and Order is corrected to replace the sixth sentence with language to conform the text of section 24.129 of the rules as follows:

"Thus, we will make a 25 percent bidding credit available to businesses owned by women and minorities bidding on the following licenses: (1) the nationwide licenses on Channel 5, Channel 8 and Channel 11; (2) all regional licenses on Channel 13 and Channel 17; (3) all MTA licenses on Channel 19, Channel 22, Channel 24; and (4) all BTA licenses on Channel 26 See 47 C.F.R. § 24.129."

2. Section 24.129 (d) of the Commission's Rules, is corrected to conform with the text by replacing "Channel 26: 930.95-931.00 and 901.8875-901.9000 MHz" with "Channel 26: 930.95-931.00 and 901.8875-901.9000 MHz **"

3. Section 24.309(B) of the Commission's Rules is corrected to conform with the text of the Third Report and Order and will read as follows:

(B) Bidding Credits. Businesses owned by women and/or minorities, including small businesses owned by women and/or minorities will be eligible for a twenty-five (25) percent bidding credit when bidding on the following licenses: (1) the nationwide licenses on Channel 5, Channel 8 and Channel 11; (2) all regional licenses on Channel 13 and Channel 17; (3) all MTA licenses on Channel 19, Channel 22, Channel 24; and (4) all BTA licenses on Channel 26. See 47 C.F.R. § 24.129. The bidding credit will reduce by 25 percent the bid price that businesses owned by women and/or minorities will be required to pay to obtain a license. The licenses that will be eligible for bidding credits are indicated by an (**) in

section 24.129 above:

4. Page 12, paragraph 30, of the Third Report and Order is corrected by replacing the first sentence to read as follows:

"Where we use simultaneous multiple round auctions to award narrowband PCS licenses it is important to specify minimum bid increments."

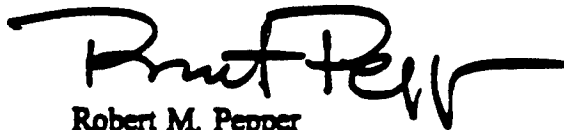
5. Page 15, paragraph 35 of the Third Report and Order is corrected by replacing the first sentence to read as follows:

" In addition, we will retain the discretion to declare at any point in a simultaneous multiple round auction that the auction will end after one additional round (or some other specified number of additional rounds)."

6. Page 18, paragraph 42 of the Third Report and Order is corrected by replacing the last sentence to read as follows:

"The initial Public Notice will also specify the filing deadline for short-form applications."

FEDERAL COMMUNICATIONS COMMISSION

A handwritten signature in black ink, appearing to read "R. M. Pepper", with a long horizontal flourish extending to the right.

Robert M. Pepper
Chief, Office of Plans and Policy

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.**

In the Matter of)	
)	
Implementation of Section 309(j))	PP Docket No. 93-253
of the Communications Act -)	
Competitive Bidding)	

THIRD REPORT AND ORDER

Adopted: April 20, 1994

Released: May 10, 1994

By the Commission: Commissioner Barrett concurring and issuing a statement.

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APPENDIX - FINAL RULES

I. INTRODUCTION

1. On August 10, 1993, the Omnibus Budget Reconciliation Act of 1993 (the "Budget Act") added a new section 309(j) to the Communications Act of 1934, as amended, 47 U.S.C. §§ 151-713 (the "Communications Act"). This amendment to the Communications Act gave the Commission express authority to employ competitive bidding procedures to choose from among mutually exclusive applications for initial licenses. The Commission's March 8, 1994 Second Report and Order¹ establishes general rules and procedures and a broad menu of competitive bidding methods to be used for all auctionable services. We indicated in the Second Report and Order that in subsequent Reports and Orders we would set forth specific competitive bidding rules that would be applicable to individual services.

¹ Second Report and Order in PP Docket No. 93-253, FCC 94-61 (released April 20, 1994) ("Second Report and Order"). A list of the commenters in this proceeding is attached as Appendix A to the Second Report and Order.

2. In this Third Report and Order, we adopt service-specific rules for competitive bidding on licenses to be awarded for Personal Communications Services in the 900 MHz band ("narrowband PCS").² Because of the significant interdependence among narrowband PCS licenses and the relatively high expected value of such licenses, we will award most narrowband PCS licenses through a sequence of simultaneous multiple round auctions. However, we may alternatively use oral sequential or single round sealed bidding to award certain narrowband PCS licenses if we determine that the operational complexity or administrative costs associated with simultaneous auctions are excessive relative to the expected value of the licenses to be awarded. Generally, we will follow the payment and procedural rules adopted in the Second Report and Order in conducting narrowband PCS auctions. In addition, we adopt general procedural and processing rules for the narrowband PCS service based on Part 22 of the Commission's rules.

3. In this Report and Order we also adopt a system of preferences designed to enhance access to the narrowband PCS spectrum and achieve the congressional directive that our competitive bidding rules ensure the opportunity of small businesses and businesses owned by women and minorities (designated entities) to participate in the auction process and in the provision of narrowband PCS services. Specifically, we will allow small businesses to pay for certain narrowband PCS licenses in installments over the term of the license. In addition, we will afford a 25 percent bidding credit to businesses owned by women and minorities bidding on certain specified narrowband PCS licenses.

II. BACKGROUND AND AUCTION ELIGIBILITY

4. Section 309(j) of the Communications Act, as amended, permits auctions only where (1) mutually exclusive applications for initial licenses or construction permits are accepted for filing by the Commission, (2) the principal use of the spectrum will involve or is reasonably likely to involve the receipt by the licensee of compensation from subscribers in return for enabling those subscribers to receive or transmit communications signals, and (3) the objectives set forth in Section 309(j)(3) would be promoted.

5. In the Second Report and Order, we concluded that narrowband PCS as a class of service would satisfy the Section 309(j) criteria for auctionability. See Second Report and Order at ¶¶ 54-58. Specifically, based on the record in this proceeding and in GN Docket

² The Commission has allocated 3 MHz of spectrum in the 900 MHz band for narrowband PCS. Narrowband PCS encompasses mobile and portable radio communications services which can be used to provide a variety of paging and messaging services to individuals or businesses. See First Report and Order in Gen. Docket No. 90-314, 8 FCC Rcd 7162(1993), on reconsideration, Memorandum Opinion and Order in Gen. Docket No. 90-314, and ET Docket No. 92-100 and ET Docket No. 92-100, 9 FCC Rcd 1337 ("Narrowband PCS Order"), 47 C.F.R. Part 24, subpart D

No. 90-314 and ET Docket No. 92-100, we concluded that the principal use of narrowband PCS spectrum, considered as a class, was reasonably likely to involve licensees receiving compensation from subscribers in return for enabling those subscribers to transmit or receive communications.

6. In addition, we concluded that competitive bidding for narrowband PCS licenses will promote the objectives set forth in Section 309(j)(3). We determined that the use of competitive bidding to award narrowband PCS licenses as compared to other licensing methods will speed the development and deployment of new services to the public with minimal administrative or judicial delays, and encourage efficient use of the spectrum as required by Section 309(j)(3)(A) and (D). In this regard we noted that auctions would award licenses quickly to those parties who value them most highly and who are thus most likely to introduce service rapidly to the public. *Id.* at ¶¶ 57-58.

7. We also concluded that competitive bidding would recover for the public a portion of the value of the spectrum, as envisioned in Section 309(j)(3)(C), because the only direct monetary compensation the public currently receives for use of the spectrum is, with few exceptions, the application fee paid by most Commission applicants. *Id.*

8. Finally, in accordance with Section 309(j)(3)(B), we determined that competitive bidding, in conjunction with our allocation and service rules, will promote access to new narrowband PCS services and technologies and disseminate licenses among a wide variety of applicants by encouraging participation by all qualified bidders. In this regard, we have adopted a set of open competitive bidding procedures, a wide variety of license types and sizes, and a menu of preferences designed to increase opportunities for designated entities who might otherwise face entry barriers. *Id.* at ¶¶ 106-115 and 231-257.

III. COMPETITIVE BIDDING DESIGN

A. Narrowband PCS Rules

9. The spectrum allocation, service definition and technical rules for narrowband PCS were completed by the Commission in the Narrowband PCS Order. The Commission defined narrowband PCS as a "family of mobile and portable radio communications services which could provide services to businesses and individuals, and be integrated with a variety of competing networks." *See* Narrowband PCS Order at ¶¶ 35-37. We anticipated that advanced paging and messaging services would be the predominant narrowband services provided. Three megahertz of spectrum were allocated to narrowband PCS in three one megahertz bands (901-902 MHz, 930-931 MHz and 940-941 MHz). Two megahertz of this spectrum were divided into specific channels and will be available for immediate licensing. *See* 47 C.F.R. § 24.129 The remaining one megahertz of narrowband PCS spectrum will be channelized and licensed in the future as this service develops.

10. The two megahertz of narrowband PCS spectrum that is ready to be licensed has been divided into 50 kHz and 12.5 kHz channels. These channels are paired in various configurations (blocks) for individual licensing. Four different service areas have been defined: 492 Basic Trading Areas ("BTA"); 51 Major Trading Areas ("MTA"); 5 regional areas (made up of MTAs), which together comprise the nation; and a nationwide service area.³ There are a total of 3,554 narrowband PCS licenses to be issued. These licenses are as follows:

	50/50 kHz (paired)	50/12.5 kHz (paired)	50 kHz (unpaired)	12.5 kHz (unpaired)	Total	Overall Total
Nationwide	5	3	3		11*	11*
Regional (5 Regions)	2	4			6	30
MTA (51)	2	3	2	4**	11	561
BTA (492)		2		4**	6	2,952
Total						3,554

- * Only 10 of the 11 nationwide narrowband PCS licenses are available to be auctioned because one applicant, Mobile Telecommunications Inc. ("Mtel"), was awarded a pioneer's preference for one of the unpaired 50 KHz licenses. Accordingly, this license will not be subject to competing mutually exclusive applications.

- ** Eligibility for these licenses is restricted to incumbent paging licensees authorized under Part 22 or Part 90 of our rules as of June 24, 1993. To be eligible, the existing paging licensee must operate at least one base station in the MTA or BTA for which it is applying for a paging response channel. In addition, these channels are limited to mobile-to-base transmissions and may be used only in a paired manner with existing paging channels to provide mobile-to-base station communications. See 47 C.F.R.

³ BTAs and MTAs are based on the Rand McNally 1992 Commercial Atlas and Marketing Guide, 123rd Edition, at pp. 38-39. See 47 C.F.R. § 24.102. The nationwide service area includes the fifty states, the District of Columbia, American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and the United States Virgin Islands. See 47 C.F.R. § 24.102 (a). Operations in markets or portions of markets which border other countries, such as Canada or Mexico will be subject to on-going coordination arrangements with the neighboring countries. See 47 C.F.R. § 24.129(e)

11. Except with respect to the 12.5 kHz unpaired licenses reserved for the upgrade of existing paging systems, narrowband PCS licensees will be permitted to aggregate up to three licenses in any geographic area. Incumbent paging licensees are permitted to obtain up to two of the 12.5 kHz unpaired licenses in any geographic area. Narrowband PCS Order at ¶ 26.

B. General Competitive Bidding Rules

12. The Second Report and Order established the criteria to be used in selecting which auction design method to use for each particular auctionable service. Generally, we concluded that awarding licenses to those parties who value them most highly will foster Congress' policy objectives. In this regard, we noted that since a bidder's ability to introduce valuable new services and to deploy them quickly, intensively, and efficiently increases the value of a license to that bidder, an auction design that awards licenses to those bidders with the highest willingness to pay tends to promote the development and rapid deployment of new services and the efficient and intensive use of the spectrum. In articulating our auction design principles we further stated that: (1) licenses with strong value interdependencies should be auctioned simultaneously; (2) multiple round auctions, by providing bidders with information regarding other bidders' valuations of licenses, generally will yield higher revenues and more efficient allocations of licenses, especially where there is substantial uncertainty as to value; and (3) because they are relatively expensive to implement and time-consuming, simultaneous and/or multiple round auctions become less cost-effective as the value of licenses decreases. See Second Report and Order at ¶ 69.

13. Based on the foregoing, we concluded that where the licenses to be auctioned are interdependent and their value is expected to be high simultaneous multiple round auctions would best achieve the Commission's goals for competitive bidding. See Second Report and Order at ¶¶ 109-111. We indicated that compared with other bidding mechanisms, simultaneous multiple round bidding will generate the most information about license values during the course of the auction and provide bidders with the most flexibility to pursue back-up strategies. Thus, we concluded that simultaneous multiple round bidding was most likely to award interdependent licenses to the bidders who value them the most. We also indicated that this method will facilitate efficient aggregation of licenses across spectrum bands thereby resulting in vigorous competition among several strong service providers who will be able rapidly to introduce a wide variety of services highly valued by end users. Second Report and Order at ¶ 106. In addition, we concluded that because of the superior information and flexibility it provides, this method will be more likely than other auction designs to yield greater revenues. Thus, we found that the use of simultaneous multiple round auctions would generally be preferred. Id.

14. The other major factor leading us to select simultaneous multiple round auctions as our preferred auction method was the value of the licenses to be auctioned. Because simultaneous multiple round bidding is more administratively complex and costly both for

bidders and the FCC than other auction methods we may select, we indicated that we would only use this auction design where license values are interdependent and the expected value of the licenses to be auctioned is high relative to the costs of conducting a simultaneous multiple round auction.

15. Circumstances Leading to Choice of Other Designs. In the Second Report and Order we stated our intention to tailor the auction design to fit the characteristics of the licenses to be awarded. We noted that simultaneous multiple round auctions may not be appropriate for all licenses. Where there is less interdependence among licenses, there is also less benefit to auctioning them simultaneously. We explained that when the values of particular licenses to be auctioned are low relative to the costs of conducting a simultaneous multiple round auction, we may consider auction designs that are relatively simple, with low administrative costs and minimal costs to the auction participants. For example, with large numbers of low value licenses we noted that we may decide that it is preferable to implement a low cost auction method such as single round sealed bidding to minimize cost and expedite the licensing process. We also noted that the Commission may wish to consider a single round of bidding in certain auctions where eligibility requirements limit participation to few bidders. See Second Report and Order at ¶¶ 112-113.

C. Competitive Bidding Design for Narrowband PCS Licenses

16. In this section, we adopt simultaneous multiple round auctions as our primary auction methodology for narrowband PCS licenses. We believe that, for most narrowband licenses this method will best meet Congress' goals in enacting the competitive bidding legislation. However, because the licenses to be awarded in the narrowband PCS service vary in terms of expected value and interdependence, we have determined that no single competitive bidding design is optimal for all licenses. Moreover, Congress directed us to "design and test multiple alternative methodologies under appropriate circumstances." See Section 309(j)(3). For these reasons, we will adopt several auction designs that may be selected under appropriate circumstances to auction narrowband PCS licenses. We specify below the various competitive bidding design methods that we may select to award particular categories of narrowband PCS licenses as well as the license characteristics that will favor their use. When we announce individual auctions to award specific groups of narrowband licenses, we will issue a Public Notice detailing the competitive bidding design and procedures to be used.

17. Simultaneous Multiple Round Auctions. Commenters who specifically address narrowband PCS auctions generally favor simultaneous multiple round bidding. American Paging Inc. ("API") supports this auction design for narrowband PCS because it provides continuous information to bidders about license values. According to API, this information is crucial to small- and mid-sized firms in developing bidding strategies for interdependent licenses. API also maintains that simultaneous multiple round bidding is essential to allow bidders to express the true value of interdependent licenses given different aggregation strategies, and will thus, ensure that licenses are awarded efficiently to the highest valued

user. See ex parte filing of API (February 24, 1994). Similarly, PacTel Corporation ("PacTel") argues that simultaneous multiple round bidding is appropriate for narrowband PCS licensing because of the high value of most narrowband PCS licenses and the significant interdependence between spectrum blocks and geographic regions. See comments of PacTel at 19.

18. We agree with commenters who support simultaneous multiple round bidding for awarding most narrowband PCS licenses. Based on the record in this proceeding, as well as our analysis of the Office of Management and Budget and the Congressional Budget Office estimates of total PCS revenues,⁴ we expect the value of most narrowband PCS licenses to be sufficiently high to warrant the use of simultaneous auctions. We further believe that the value of most narrowband PCS licenses will be significantly interdependent because of the desirability of aggregation across spectrum blocks and geographic regions and because there is a high degree of substitutability among licenses with the same amount of spectrum and covering the same geographic area. Therefore, we conclude that simultaneous multiple round bidding will be most likely to award narrowband PCS licenses to bidders who value them the most highly and who are most likely to deploy rapidly new narrowband PCS technologies and services, promote the development of competition for the provision of those and other services, and thus foster economic growth.

19. By facilitating efficient (but not anticompetitive) aggregation of licenses, we believe that simultaneous multiple round bidding will allow bidders to express the full value of the interdependency among licenses. Moreover, simultaneous multiple round bidding will provide bidders with the opportunity to pursue back-up strategies that enable them most efficiently to obtain the license combinations which satisfy their service needs. Finally, given that narrowband PCS is a new service with many inherent uncertainties, we conclude that simultaneous multiple round bidding is desirable because of the continuous information it provides bidders during the course of the auction which, in turn, should result in increased revenues for the government.

20. We recognize, however, that simultaneous multiple round bidding may involve a greater degree of complexity than other competitive bidding methods, and that it may present greater operational difficulties for both the FCC and for bidders. Therefore, where license values are expected to be relatively low, bidder participation is expected to be limited or where the interdependence of licenses is less significant, we may decide to use alternative auction methods. In addition, we may select an alternative auction method if, as we gain experience with auctions, we determine that simultaneous multiple round auctions are too administratively complex and costly to implement. In selecting the auction method for each narrowband PCS auction, we will seek to balance the advantages of more sophisticated auction methods, such as simultaneous multiple round bidding, with the greater complexity

⁴ Congressional Budget Office, *Auctioning Radio Spectrum Licenses* at 23-38, (March 1992).

and cost they may entail for both the FCC and bidders.

21. Oral Sequential and Single Round (Sealed Bid) Auctions. If, as a result of our auction experience, we determine that the operational costs or complexities associated with simultaneous multiple round auctions outweigh their benefits, we may decide instead to employ either oral sequential auctions or single round sealed bid auctions. In an oral sequential auction, licenses are put up for bid one at a time, so that bidding ends on one item before it begins on the next item. Oral sequential auctions generate valuable information about earlier auctioned licenses, which can assist bidders in valuing later auctioned licenses. However, if license values are interdependent oral sequential auctions are less likely than simultaneous auctions to award interdependent licenses to the parties who value them the most and to aggregate licenses efficiently, because bidders for licenses that are auctioned early must bid with less information about the value of licenses to be auctioned later, and have less opportunity to pursue backup bidding strategies. Nonetheless, because oral sequential auctions are generally less complex, and costly both for the FCC and for potential bidders, they may be appropriate to use where the expected value of the narrowband PCS licenses to be auctioned is low relative to the costs of conducting a more complex auction or where interdependence is less significant.

22. We may find, for some narrowband PCS licenses that even the lesser cost and complexity of oral sequential auctions are not justified by the revenues these licenses would be expected to generate. In such cases, we may choose to award licenses by single round sealed bidding where bids for all licenses are submitted simultaneously and the high bidder for each license is determined after a single round of bidding. Single round sealed bidding has the principal advantage of being relatively simple for bidders to understand and inexpensive for the FCC to administer and also can generally be completed fairly rapidly. However, because single round sealed bidding provides less information and flexibility to bidders than either simultaneous or sequential auctions, we will generally use this method only where there is less interdependence among individual licenses or groups of licenses and the expected value of the licenses to be auctioned is low relative to the cost of conducting a more complex auction. In addition, we may select this auction design where eligibility requirements limit participation to relatively few bidders.

23. Combinatorial Bidding. One commenter, PageMart Inc. ("PageMart"), indicated that the Commission should employ a system of combinatorial bidding for narrowband PCS licensing. In general terms, combinatorial bidding allows bidders to bid for multiple licenses as all or nothing packages.⁵ Combinatorial bidding can be implemented with either

⁵ In combinatorial bidding, if a bid for a group of licenses exceeds the sum of the highest bids for the individual licenses that comprise the package, then the package bid would win. In the Second Report and Order we also indicated that we may institute a premium so that the combinatorial bid would win only if it exceeded the sum of the bids for individual licenses by a set amount. See Second Report and Order at ¶ 114.

simultaneous or sequential auction designs. PageMart argues that combinatorial bidding for narrowband PCS licenses is necessary to enable bidders to assemble easily national and supra-regional service areas. Without combinatorial bidding, PageMart maintains, insufficient national and supra-regional licenses will be available, thus significantly limiting the ability of all but the largest firms to compete in these markets. See reply comments of PageMart at 16. In addition, PageMart argues that only if firms are permitted to submit combinatorial bids can they adequately express value interdependencies without corresponding distortions in bidding behavior. In this regard, PageMart suggests that in the absence of combinatorial bidding, bidders assembling service areas on an MTA-by-MTA or region-by-region basis will, in many cases, cause the licenses captured early to be undervalued and licenses won later to be overvalued. See reply comments of PageMart at 19.

24. Although we recognized in the Second Report and Order that there were significant benefits associated with combinatorial bidding, especially in terms of efficient aggregation of licenses, we concluded that simultaneous multiple round auctions offer many of these same advantages without the same degree of administrative and operational complexity and without biasing auction outcomes in favor of combination bids. See Second Report and Order at ¶¶ 101-105. Since simultaneous multiple round bidding is our preferred auction method for awarding narrowband PCS licenses, we think combinatorial bidding will be unnecessary in most narrowband PCS auctions. With respect to narrowband PCS licenses, we do not believe that the advantages of combinatorial bidding outweigh the disadvantages. While narrowband PCS licenses are likely to be worth more to some bidders as a part of a package, we believe that simultaneous multiple round bidding will provide these bidders with ample opportunity to express the value of interdependent licenses. Moreover, we conclude that there will not be any extreme discontinuity in value if some licenses in a package are not obtained. We believe that the opportunity to acquire licenses in after market transactions and the ability to withdraw bids (upon payment of the bid withdrawal penalty) will limit the risks associated with failing to successfully acquire all of the licenses in a desired package. Finally, we believe that the narrowband PCS allocation plan, which provides for 11 nationwide and 30 regional licenses, already addresses many of PageMart's concerns regarding insufficient numbers of national and supra-regional licenses. However, in circumstances where we do not use simultaneous multiple round bidding, we may permit combinatorial bidding.

D. Bidding Procedures

25. Grouping of Licenses. Whether we use our preferred approach of a sequence of simultaneous multiple round auctions or sequential individual auctions, the Commission must choose which licenses will be auctioned together. The importance of the choice of license groupings increases with the degree of interdependence among the individual licenses or groups of licenses to be auctioned. Grouping interdependent licenses together and putting them up for bid at the same time will facilitate awarding licenses to bidders who value them the most highly by providing bidders with information about the prices of complementary and substitutable licenses during the course of an auction. Accordingly, we will group

narrowband PCS licenses into the various simultaneous auctions by aggregating together those licenses exhibiting the greatest degree of interdependence so that there will be limited interdependence across groups.

26. Choosing which licenses to auction simultaneously requires a judgment about the degree of interdependence, i.e., the extent to which the amount bidders are willing to pay for one license depends on the price of another. Licenses may be interdependent either because they are substitutes or because they are complements. With substitutes, the lower the price of one license, the less a bidder will be willing to pay for another. With complementary licenses, on the other hand, the lower the price of one license, the more a bidder will be willing to pay for another. This is true because generally complementary licenses are worth more as part of a package than individually. For example, bidders are likely to be willing to pay more for two geographically contiguous PCS licenses than two equivalent non-contiguous licenses, and a single bidder may be willing to pay more for the two licenses than would two separate bidders.

27. Based on the foregoing, we will auction narrowband PCS licenses in the following license groupings. We will award all nationwide, regional and MTA (other than MTA response channels) licenses through a sequential series of simultaneous auctions.⁶ In this regard, to maximize the information available to bidders and increase gradually the complexity of the narrowband PCS auctions as we gain more auction experience, we will begin by auctioning the ten nationwide narrowband licenses in one simultaneous multiple round auction. After the nationwide narrowband PCS auction is complete, we will auction the five regional blocks (30 licenses) together in one simultaneous multiple round auction. We subsequently will conduct another simultaneous multiple round auction for all of the 50/50 kHz paired, 50/12.5 kHz paired and the 50 kHz unpaired MTA licenses (357 licenses).⁷ Simultaneous multiple round auctions are appropriate for each of these license groupings because of the relatively high value and significant interdependence of the licenses. In each case, the licenses are complements as well as substitutes, and thus their values are highly interdependent. They are complements because license aggregation enables bidders to realize

⁶ However, as we gain auction experience we may determine that an alternative auction method or license grouping is more appropriate. Under these circumstances, as provided in the general procedural rules, we will announce before each auction the licenses to be auctioned and the type of competitive bidding method to be used, as well as the stopping rules and activity rules, if any, that will be used.

⁷ Alternatively, we may determine that, for reasons of operational or administrative simplicity, it would be preferable to auction these MTA licenses by region (there are approximately 112 MTA licenses in each region) in a series of simultaneous multiple round auctions (in which case we would also include the 12.5 kHz unpaired MTA licenses). Under these circumstances, we would auction all of the MTA licenses in a particular region before moving on to the next region.

certain economies of scale and, in the case of sub-national licenses, facilitates seamless roaming over wide areas, as well as aiding in the control of interference at license boundaries. These licenses are also substitutes because, to varying degrees, they can be used as alternatives in the provision of the same or similar services.

28. After auctioning the MTA licenses, we will hold another simultaneous multiple round auction for the 50/12.5 kHz paired BTA licenses (984 licenses). Although most of these licenses are expected to have relatively low values, individually they are highly interdependent, and their aggregate value (compared to the cost of conducting a simultaneous auction) is sufficiently high to justify a simultaneous multiple round auction. Using this approach will also enable the Commission to gain valuable experience conducting simultaneous multiple round auctions involving large numbers of licenses.

29. Finally, we will auction the 12.5 kHz unpaired MTA (204 licenses) and the 12.5 kHz unpaired BTA response channel licenses (1,968 licenses) in a single round sealed bid auction because their value is low relative to the cost of conducting other more complex auctions. Moreover, because only incumbent paging licensees are eligible to bid on these licenses, sealed bid auctions may help to reduce the chances of collusion among the limited number of bidders. In addition, the loss in efficiency from using single round bidding will be mitigated by the fact that bidders on these licenses will have access to information about license values from the simultaneous multiple round auctions that will precede the sealed bid auction. Under this auction method, however, bidders cannot be certain that they will be the high bidder on all of the licenses they seek to obtain because single round sealed bidding does not provide bidders with timely information about license values and bidders do not have the opportunity to increase their bid amounts during the course of the auction. Therefore, in this context we will allow bidders to bid on more licenses than they are eligible to be awarded under the existing aggregation limits, provided they specify in advance the order in which they wish to be awarded such licenses in the event that they are the high bidder on more licenses than they are permitted to hold.⁸ Bidders, however, will only be permitted to bid on response channel licenses for which they are otherwise eligible (i.e., they must operate at least one base station in the service area of the response channel for which they are applying).⁹

30. Bid Increments. Where we use multiple round auctions to award narrowband PCS licenses it is important to specify minimum bid increments. The bid increment is the amount or percentage by which the bid must be raised above the previous round's high bid in

⁸ See 47 C.F.R. § 24.130 (a) (paging licensees may hold a maximum of two response channel licenses within the same geographic area). The Commission, however, will not designate a bidder the winning bidder on more licenses than it is eligible to hold. Under these circumstances, a high bidder will not be subject to the bid withdrawal penalty (discussed *infra*) for those additional licenses for which it is not designated the winning bidder.

⁹ *Id.*

order to be accepted as a valid bid in the current bidding round. The application of a minimum bid increment speeds the progress of the auction and, along with activity and stopping rules, helps to ensure that the auction comes to closure within a reasonable period of time. Establishing an appropriate minimum bid increment is especially important in a simultaneous auction with a simultaneous closing rule. In that case, all markets remain open until there is no bidding on any license and a delay in closing one market will delay the closing of all markets.

31. Because we plan to use simultaneous multiple round auctions for most narrowband PCS licenses, we believe that it is necessary to impose a minimum bid increment to ensure that the narrowband PCS auctions conclude within a reasonable period of time. As we recognized in the Second Report and Order, it is important in establishing the amount of the minimum bid increment to express such increment in both a percentage and fixed dollar amount. See Second Report and Order at ¶ 126. This will ensure a timely completion of the auction even if bidding begins at a very low dollar amount. Accordingly, we may impose a minimum bid increment of 5 percent or \$0.01 per pop per MHz, whichever is greater, in narrowband PCS auctions where multiple round bidding is used. Commenters addressing the issue generally supported a minimum bid increment of five percent. PacTel, for example, argues that this amount will provide a reasonable compromise between the goal of completing the auction quickly and that of revealing information about the distribution of valuations among bidders.¹⁰ Applying a \$0.01 per pop per MHz minimum bid increment in addition to the percentage calculation we believe is appropriate to provide flexibility for a wide range of different license values and will ensure timely closure of auctions, even where bidding begins at a very low dollar amount.¹¹

32. PacTel also suggests, in the context of simultaneous auctions that the Commission should vary the bid increment, reducing it as the number of active bidders declines, in order to bring all markets to a close at approximately the same time. This would move the auction quickly at the beginning while still allowing smaller price movements as the auction nears a close. Such a refinement will also reduce the chances of ties by allowing bidders to express relatively small differences in license valuations.¹² Accordingly, the Commission retains the discretion in narrowband PCS auctions to set and, by announcement before or during the auction, vary the minimum bid increments for individual licenses or groups of licenses over the course of an auction. We will most likely reduce the minimum bid increment only in the

¹⁰ Exhibit attached to PacTel Comments: Auction Design for Personal Communications Services, R. Preston McAfee, p. 16.

¹¹ \$0.01 per-pop per MHz would represent almost three percent of the value of a license based on an extrapolation from the \$10.6 billion estimated value of the 120 MHz of broadband PCS spectrum. See Second Report and Order ¶ 177.

¹² Where a tie does occur, the high bidder will be determined in the order the bids were received by the Commission. See Second Report and Order at ¶ 125.

later bidding rounds, as bidding begins to come to a close.¹³

33. Stopping Rules for Multiple Round Auctions. We also noted in the Second Report and Order that with multiple round auctions a stopping rule must be established for determining when the auction is over. See Second Report and Order at ¶ 127. We identified three types of stopping rules that could be employed in simultaneous multiple round auctions: markets may close individually, simultaneously or a hybrid approach may be used. Under a market-by-market approach, bidding closes on each license after one round passes in which no new acceptable bids are submitted for that particular license. With a simultaneous stopping rule, bidding remains open on all licenses until there is no bidding on any license.¹⁴ Under this approach, all markets will close if a single round passes in which no new acceptable bids are submitted for any license. Using a hybrid approach, we may use a simultaneous stopping rule, along with an activity rule designed to bring the markets subject to the simultaneous stopping rule to a close within a reasonable period of time, for the higher value licenses. And for lower value licenses, where the loss from eliminating some back-up strategies is less, we may use simpler market-by-market closings. In the Second Report and Order we recognized that such a hybrid approach might simplify and speed up the auction process without significantly sacrificing efficiency or expected revenue. *Id.*

34. For narrowband PCS we believe that a simultaneous stopping rule is preferable for the nationwide, regional and MTA licenses, which are expected to have relatively high values and are fewer in number, which will reduce the complexity of implementing a simultaneous stopping rule. Since we intend to impose an activity rule (as discussed below at ¶ 37-41), we believe that allowing simultaneous closing of all markets will afford bidders flexibility to pursue back up strategies without running the risk that bidders will hold back their bidding until the final rounds. However, because of the large number of BTA licenses and their relatively low expected value, we may use either a hybrid stopping rule or allow markets to close individually in auctions for these licenses.¹⁵

¹³ In oral sequential auctions the auctioneer may within its sole discretion establish and vary the amount of the minimum bid increment in each round of bidding.

¹⁴ This approach has the advantage of providing bidders full flexibility to bid for any license as more information becomes available during the course of the auction, but it may lead to very long auctions, unless an activity rule is imposed. Furthermore, such a stopping rule may be vulnerable to strategic delay by bidders seeking to impede closure of the auction.

¹⁵ However, if as we gain experience with auctions, we determine that a simultaneous stopping rule will be simpler to administer than either a hybrid or a market-by-market stopping rule, we may use a simultaneous stopping rule for the BTA licenses as well. Conversely, if as a result of our auction experience we conclude that a simultaneous stopping rule is too administratively complex, we may employ a market-by-market or hybrid stopping rule for the higher value narrowband licenses. We will announce by Public Notice before each auction the stopping rule that we will use.

35. In addition, we will retain the discretion to declare at any point in a multiple round auction that the auction will end after one additional round (or some other specified number of additional rounds). This will prevent bidders from strategically delaying an auction by bidding on one license in order to delay the closing of bidding on all licenses. This will also ensure ultimate Commission control over the duration of the auction. Moreover, while we generally will provide bidders with a single business day to submit bids, and conduct one round of bidding each business day, we reserve the discretion to vary the duration of bidding rounds or the interval at which bids are accepted (e.g., run two or more rounds per day rather than one), in order to move the auction toward closure more quickly. We will be most likely to shorten the duration and/or intervals between bidding rounds where there are relatively few licenses to be auctioned, where the value of the licenses is relatively low or in early rounds to speed the auction process. Where license values are expected to be high or where large numbers of licenses are being auctioned we may increase the duration and/or intervals between bidding rounds. We will announce by Public Notice, and may vary by announcement during an auction, the duration and intervals between bidding rounds.

36. Activity Rules. As discussed above, in order to ensure that simultaneous auctions with simultaneous stopping rules close within a reasonable period of time, we believe that it is necessary to impose an activity rule to prevent bidders from waiting until the end of the auction before participating. Because simultaneous stopping rules generally keep all markets open as long as anyone wishes to bid, they also create an incentive for bidders to hold back until prices approach equilibrium before making a bid and risking paying a penalty for withdrawing. As noted above, this could lead to very long auctions. An activity rule is less important when markets close one-by-one because failure to participate in any given round may result in losing the opportunity to bid at all, if that round turns out to be the last.

37. In the Second Report and Order we adopted the Milgrom-Wilson activity rule as our preferred activity rule where a simultaneous stopping rule is used. See Second Report and Order at ¶¶ 144-145. Under the Milgrom-Wilson approach, bidders are encouraged to participate in early rounds by limiting their maximum participation to some multiple of their minimum participation level. Bidders are required to declare their maximum eligibility in terms of pops-MHz, and make an upfront payment equal to \$0.02 per MHz-pop. (See discussion of upfront payments *infra*.) That is, bidders will be limited to bidding on licenses encompassing no more than the number of MHz-pops covered by their upfront payment. Under this approach, bidders will have the flexibility to shift their bids among any licenses for which they have applied so long as the total MHz-pops encompassed by those licenses does not exceed the number for which they made an upfront payment. Moreover, bidders will be able to secure the freedom to participate at whatever level they deem appropriate by making a sufficient upfront payment. To preserve their maximum eligibility, however, bidders would be required to maintain some minimum activity level during each round of the auction.

38. Under the Milgrom-Wilson proposal, the minimum activity level, measured as a fraction of the self declared maximum eligibility, will increase during the course of the

auction. Milgrom and Wilson divide the auction into three stages.¹⁶ During the first stage of the auction, a bidder is required to be active on licenses encompassing one-third of the MHz-pops for which it is eligible. The penalty for falling below that activity level is a reduction in eligibility. At this stage, bidders would lose three MHz-pops in maximum eligibility for each MHz-pop below the minimum required activity level. In other words, each bidder would retain eligibility for three times the MHz-pops for which it is an active bidder, up to the MHz-pops covered by the bidder's upfront payment. In the second stage, bidders are required to be active on two-thirds of the MHz-pops for which they are eligible. The penalty for falling below that activity level would be a loss of 1.5 MHz-pops in eligibility for each MHz-pop below the minimum required activity level. In the third stage, bidders are required to be active on licenses encompassing all of the MHz-pops for which they are eligible. The penalty for falling below that activity level is a loss of one MHz-pop in eligibility for each MHz-pop below the minimum required activity level. Each bidder thus retains eligibility equal to its current activity level (1 times the MHz-pops for which it is an active bidder).

39. Finally, to avoid the consequences of clerical errors and to compensate for unusual circumstances that might delay a bidder's bid preparation or submission on a particular day, Milgrom and Wilson recommend permitting each bidder to request and automatically receive a waiver of the activity rule once every three rounds. We believe that some waiver procedure is a critical element of the Milgrom-Wilson activity rule, since the Commission would not wish to reduce a bidder's eligibility due to an accidental act or circumstances not under the bidder's control.

40. We believe that the Milgrom-Wilson approach will best achieve the Commission's goals of affording bidders flexibility to pursue back up strategies, while at the same time ensuring that simultaneous auctions are concluded within a reasonable period of time. Accordingly, we plan to impose such an activity rule in conjunction with a simultaneous stopping rule to award higher value narrowband PCS licenses. We intend, however, to use a simplified waiver procedure whereby bidders will be permitted five automatic waivers from the activity rule during the course of an auction. With respect to the 50/12.5 kHz paired BTA licenses to be awarded by simultaneous auction, we may determine that because of their lower expected value a market-by-market stopping rule is more appropriate, in which case no activity rule will be necessary. However, if a simultaneous stopping rule is used for these licenses we may select one of the simpler activity rules described in the Second Report and Order.¹⁷ Moreover, if as we gain experience with auctions, we determine that the Milgrom-

¹⁶ The auction will move from stage one to stage two when, after three rounds of bidding, the high bid has changed on five percent or fewer of the licenses (measured in terms of MHz-pops) being auctioned. Stage three will begin when the high bid has changed on two percent or fewer licenses (measured in terms of MHz-pops) over three rounds.

¹⁷ Our rules allow the Commission to make any such modifications to activity rules as appropriate for a particular auction. The Commission retains the discretion to choose among